

B R E V I O R A

Museum of Comparative Zoology

CAMBRIDGE, MASS.

JUNE 21, 1957

NUMBER 77

DACETINOPS, A NEW ANT GENUS FROM NEW GUINEA

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In the course of an extended field trip to the southwestern Pacific area during 1954-1955 (supported by the Museum of Comparative Zoology and the Society of Fellows of Harvard University), one of us (Wilson) was able to collect in the rich tract of rain forest at the Busu River, near Lae, Australian Mandated Territory of New Guinea. Among the samples obtained here were several of a small myrmicine ant with the habitus, both in life and in preservation, of certain short-mandibulate members of tribe Dacetini. However, further examination revealed that this species could not be a member of the Dacetini, even though it possessed certain features, especially the spongi-form appendages of the petiole, postpetiole and gaster, not otherwise known among ants outside the Dacetini. This remarkable pseudo-dacetine is described below and its affinities discussed.

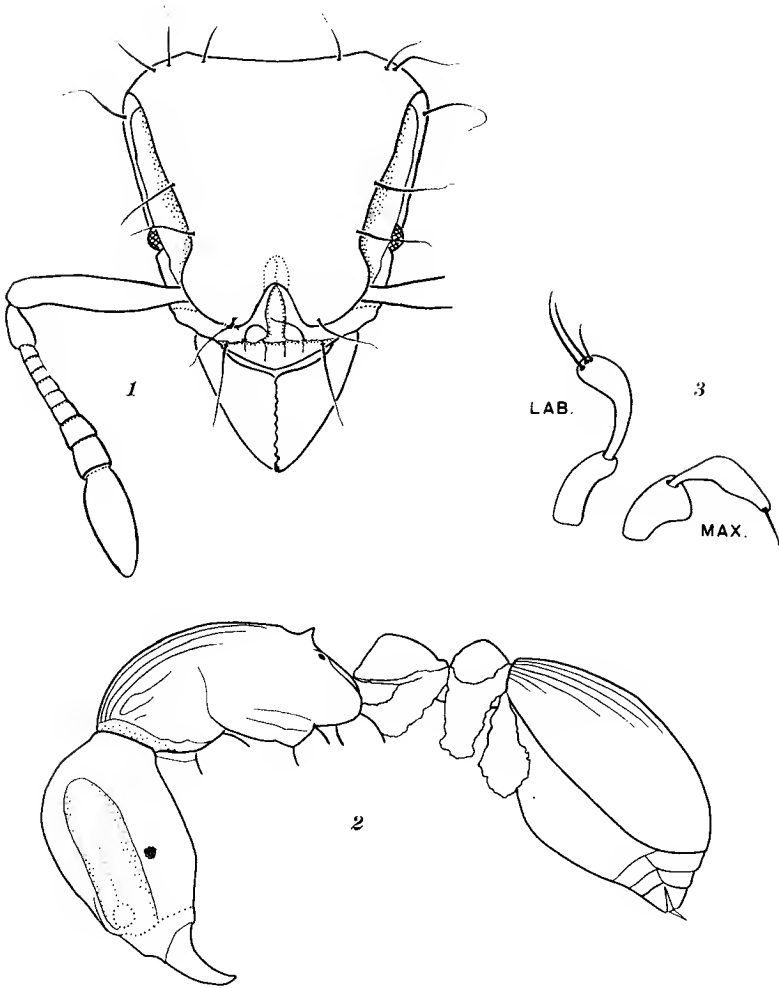
DACETINOPS gen. nov.

Diagnosis, worker. Small myrmicine ant, apparently closest to *Lachnomyrmex* Wheeler of the American tropics. Body compact, integument hard and thick. Head subtriangular (with mandibles triangular), widest across occipital region, tapering toward mandibles. Antennal scrobes present, deep and distinctly

bounded; compound eyes moderate in size, situated ventrad of scrobes near midlength of head. Antennae 11-segmented, with a fairly distinct 3-segmented club. Both sets of palpi 2-segmented. Clypeus convex, obscurely bicarinate, its anterior border forming a broadly rounded translucent apron. Mandibles triangular, broad, with straight, crenulate masticatory margins. Alitrunk compact, arched and sutureless dorsally; propodeal dorsum and declivity almost continuous; a pair of small but distinct propodeal teeth present. Petiolar node sessile (a small condylar extension is visible from above), rounded above, and sloping from a median summit; postpetiole transversely ellipsoidal, rounded above. Gaster broad and somewhat depressed; first segment taking up nearly all the length, nearly circular in outline as seen from above, bluntly margined along the sides in front; remaining segments small, retracted. Sting sclerotized, acute, exsertile. The lower halves of the petiole, postpetiole and anterior part of the first gastric segment bearing and covered by bulky festoons of whitish spongiform tissue. Sculpture consisting predominantly of very coarse longitudinal costation, becoming more reticulate on head, nodes and sides of alitrunk; posterior half of gaster smooth and shining, as is also the propodeal declivity. Mandibles striate. Legs and antennal scrobes finely and densely punctulate. Pilosity consisting of sparse, long, flexuous tapered hairs, mostly situated at definite bilateral positions over the body. Pubescence forming a thin cover mostly only on appendages. Color deep brownish red.

Female. Dealate, but with thoracic flight segments well developed, as usual for winged myrmecines of small size; wing stumps present. Size only slightly larger than worker; form, except as mentioned, similar to that of worker, with only the usual slight differences of caste. The compound eyes are larger than in the worker, but are still modest in size. Scutum and scutellum forming together a nearly plane platform, crossed by the distinct transscutal suture; prescutellum reduced to two small lobes, one on each side of the suture, so that the scutum and scutellum meet at the suture. Scuto-scutellar platform evenly costate longitudinally.

Type of genus: *Dacetonops cibdela* sp. nov.



Dacetinops cibdela, gen. et sp. nov., worker. Fig. 1, holotype, head in full-face view; most of sculpture omitted, and only the hairs nearest the periphery shown. Fig. 2, holotype, body in lateral view; hairs and all sculpture except the prominent dorsal costation omitted. Fig. 3, paratype, detail of maxillary and labial palpi. Drawings by Nancy Buffer.

DACETINOPS CIBDELA sp. nov.

Holotype worker. TL 2.7, HL 0.64, HW 0.59 (CI 91), ML 0.16 (M25), WL 0.76, petiole L 0.22 mm. Index of cephalic depression (ICD) is about 62. Measurements and indices are the ones used in recent works on Dacetini by Brown (see especially Brown, 1953, Amer. Midl. Nat., 50: 7-15).

Form of head and mandibles as shown in Figures 1 and 2. Scrobes sharply defined, each divided partially by a fine anterior carina, and able to receive the entire antenna except the apical part of the club; upper scrobe margins narrowly lamellate. Pronotum margined in front, submarginate along the sides; humeral angles obtuse, but distinct, subtuberculate. Propodeal region of alitrunk short, tapering rapidly behind promesonotum; propodeal declivity weakly concave from side to side, bounded above by an ogival margin, and marginate laterally. Propodeal teeth acute, feebly downcurved toward their apices, their bases separated by about 4 times their length. Propodeal spiracles not far under the teeth on the lateral margins of the declivity, facing posterolaterad. Petiolar node seen from above approximately as broad as long, with strongly rounded sides, widest near midlength. Postpetiole about half again as broad as long, ellipsoidal or subreniform as seen from above, the more strongly rounded margin posterior. Gaster with a short, straight anterior margin opposite the postpetiole, the sides rounded away on each side.

Spongiform appendages of petiole, postpetiole and gaster finely areolate, apparently composed of cuticular material, not arranged in distinct lobes like those of the dacetines, but narrowed medially below, where masses of opposite sides are joined (Fig. 2).

About 10 coarse, fairly distinct longitudinal costae across the head between the ends of the scrobes, these converging and anastomosing anteriorly between the frontal lobes, and joined by short transverse ridges to form a coarse reticulum (not shown in the figures). The bottoms of the large pits or foveolae thus enclosed are sculptured finely and are subopaque. Disposition of costulae on clypeus shown in Figure 1; interspaces here finely sculptured and subopaque. Underside of head coarsely rugoreticulate. Mandibles coarsely striate at base, becoming smooth

and shining apicad, with scattered punctures. Dorsum of alitrunk with smooth, straight, heavy longitudinal costae running from anterior pronotal margin to the beginning of the propodeal declivity (10 costae across pronotal dorsum), shining and with more or less shining interspaces. Sides of alitrunk and dorsal surface of petiolar node coarsely rugo-reticulate. Basal half of postpetiole and of gaster with coarse longitudinal costae (9-10 across gastric base), remainder of gaster, postpetiole, declivity and concave lateral faces of propodeum smooth and shining, often with scattered punctures. Legs, antennae, scrobes and a band along each side of the first gastric sternum densely punctulate, opaque.

Long, fine, tapered hairs scattered over dorsum of head (those nearest the cephalic borders are shown in Figure 1), alitrunk, both nodes and gaster as well as a few on the gular surface of the head, on the coxae and on the underside of the femora; length ranging about 0.12-0.19 mm. Short, fine, appressed to decumbent hairs forming a pubescence on the legs, antennae and sternum and apex of gaster; similar hairs are sparsely distributed over both surfaces of head, mostly one hair to a foveola, and over mandibles.

Basic body color deep brownish red; mandibles, legs and antennae, especially the club and the first funicular segment, more yellowish.

Holotype worker (deposited in the Museum of Comparative Zoology) taken in rain forest at the lower Busu River, near Lae, New Guinea (E. O. Wilson leg., No. 1058), May 17, 1955, either as a stray or in berlesate from under bark of a large Zoraptera-stage log. Three additional workers (paratypes) were taken in this collection and bear the same number.

Paratypes, workers. 9 mounted dry, 3 in alcohol, all collected in the same tract of forest as the holotype (Wilson Nos. 899, 942, 978, 1052, 1058, 1113). Deposited in Museum of Comparative Zoology, U. S. National Museum, Coll. G. C. Wheeler, and one or more each in Australian and European collections as yet unselected. Total maximum variation for all series: TL 2.2-2.6, HL 0.54-0.63, HW 0.50-0.57 (CI 91-93), ML 0.15-0.16 (MI 24-27), WL 0.65-0.76, petiole L 0.18-0.22 mm. Greatest intranidal variation occurs in series No. 1052: TL 2.2-2.5, HL 0.54-0.62, HW

0.50-0.56 (CI 91-92), ML 0.15 (MI 25-27), WL 0.65-0.75 mm. Very little variation among the workers of these lots. Sculpture, particularly of cephalic dorsum, varies in minor details; spongi-form appendages a trifle more voluminous in some specimens than in others.

Paratypes, dealate females. 3 specimens, taken with workers (Nos. 942, 1052, 1113, the last in alcohol, not measured). Deposited in the Museum of Comparative Zoology and elsewhere with the workers. Queen variation (Nos. 942 and 1052): TL 2.6-2.8, HL 0.58-0.62, HW 0.56-0.60 (CI 96-97), ML 0.17-0.19 (MI 29-30), WL 0.79-0.85 mm.

Larva. A single medium larva was preserved in alcohol. This specimen is short and thick, with head turned ventrad. Without proper preparation, none of the details of this larva can be made out, except that the hairs are varied in length, with some of the longer dorsal ones anchor-tipped. This larva has been sent to Dr. G. C. Wheeler for expert study (See Breviora No. 78).

Biology. The six collections were all made on the forest floor in heavy to medium rain forest. Nos. 978 and 1052 were strays taken from soil-leaf litter berlesates. No. 899 was a stray sample from the forest floor, beneath a log. No. 942 was a small nest in a cavity under the bark of a Zoraptera-stage branch about 6 cm. in diameter, buried in the leaf litter; the queen and two workers were taken. No. 1113 is a queen with one worker, originally taken with a few larvae and two eggs in a small cavity in the middle of a small piece of rotten wood buried in the leaf litter. This apparently incipient colony was kept in an artificial nest for 10 days, but showed no signs of predatory or nest-founding behavior during that time. All of the collections were made during the first three weeks in May, 1955.

From these observations, we may perhaps conclude that *D. cibdela* is normally a dweller in the leaf litter of the rain forest floor, where it frequently, perhaps usually, nests in or beneath the bark of rotting logs or other large or small masses of rotting wood. Apparently the nests are small in volume and in population, like those of other specialized small myrmecines with similarly slight differences separating the female and worker castes. Wilson noted that the workers of this species walk in a slow, deliberate fashion reminiscent of dacetines and basicerotines.

Relationships. Although from its general habitus this species seems to belong to the Daetini, a closer look does not bear out placement with that tribe. In the first place, its resemblance is general, and not particular to any one daetine genus or subtribe. The shape of the head and mandibles are fundamentally different from those of any daetine, as is also the arrangement of the spongiform appendages, which at first sight are so daetine-like. The antennae are 11-segmented, like those of the primitive daetines, but the distinct club is not a daetine feature; the palpi of *Dacetinops* are segmented 2, 2, against 5, 3 for the primitive daetines and 1, 1 for the higher daetines. The details of structure of the alitrunk and petiolar node are also not like those of any daetine, and the sculpture recalls that of the daetines only at the gastric base, but even here, the costulae are of a basically different type. Ties with the Basieerotini are even fewer, the position of the eyes being one important difference: there seems to be no need to compare further with basieerotines.

As already mentioned, the closest similarity holds with the neotropical genus *Lachnomyrmex* Wheeler (with three described species). The best account of *Lachnomyrmex* is that of M. R. Smith (1944, Proc. Ent. Soc. Washington, 46:225), which gives excellent figures of the genus. *Lachnomyrmex* also has an 11-segmented antenna, but the club is 2-segmented. This difference in club segmentation is really not a very important character, since only a slight change in size of the antepenultimate segment would be needed to make the *Lachnomyrmex* club 3-segmented. *Lachnomyrmex* has no posterior expansion of the head, as in *Dacetinops*, and the form of the node is somewhat different, as well as the proportions of the parts of the alitrunk, but the differences here are not as serious as those between *Dacetinops* and the daetines. *Dacetinops* appears to belong, with *Lachnomyrmex*, to a group of small myrmicines that includes also the New World *Rogeria* Emery (the so-called *Rogeria* from the *Melanesian* area are not true members of the genus, but are closer to *Lordomyrma*), *Apsychomyrmex* Wheeler, and *Adelomyrmex* Emery, as well as the primitive *Agroecomyrmex* Wheeler of the Baltic Amber. Apparently these are specialized relicts of an ancient and widespread myrmicine fauna that still retain some marks of their ectatommine ancestry.